# Privacy Recommendations for 802 LMSC Section 8: Recommendations

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# Abstract

We introduce substantial changes to section 8 of the current 802E draft v 0.07, with a view to providing a framework within which standards developers, implementers and network designers can evaluate their operations with respect to privacy and security.

Through a set of template questionnaires and recommendations, combined with exemplifications of adversarial situations presented previously to the group, we present a rigorous framework for self-assessment. Our work draws on experiences from other standards bodies, such as the IETF, and academia, including to the extent that privacy research has previously been presented at the IEEE 802 LMSC.

# Section 8 revision – overview

- Title: Recommendations (same as the old title)
- Section 8.1: Template questionnaires (new addition!)
    - For standards developers
        - Identifiers
        - Observers
        - Configurability
    - For standards implementers
    - For network designers
- Template questionnaires *broadly* based on IETF RFC 6973 (Privacy Guidelines), but adapted to 802 conditions and IEEE terminology as necessary.

# Section 8 revisions – overview

- Section 8.2: Recommendations

  - Eight preferred (recommended) considerations for standards developers, implementers and network designers to take into account when planning their work.

- Section 8.3: Practical examples

  - For each consideration or pair of considerations in section 8.2, a short explanation and example of how a recommendation may be taken into account. Will also exemplify and contextualise situations and questions brought forward in Section 8.1 with subsections.

# Section 3 revisions – consistency

- Changes in section 3:

    - Adding "identifier" in line with previous IEEE Standards Dictionary definitions, taking into account 802 LMSC peculiarities.

        - Introducing distinctions: persistent and temporary identifiers.

    - Converging on "target", "personal device" terminology (deleting mentions of "PII principal" and similar terms).

    - Converging on "adversary" terminology, rather than alternating adversary/attacker.

    - Small cleaning: removing "NOTE"-sections in definitions (esp. in PII definition), clarifying language (for instance, removing mentions of bridged networks that would not be appropriate in a 802.11 or .15 context), shortening redundancies.

- Additionally, uses of the word *may* in descriptive texts has been phased out in favour of *might* (withouth consideration to grammar), since *may* is an IEEE reserved word for normative statements(!)

# Section 6 remake – overview

- Maintaining previous texts under new headings

  - 4 subsections instead of 9. Less overlap between sections.

  - 6.1 Context: Context of PII, privacy, justifications for PII collection and identifier use in technology. (previously: 6.1, 6.2, 6.3)

  - 6.2 IEEE and Privacy: a short descriptive text of ways in which 802 LMSC processes may impact privacy (merged sections 6.4, 6.9)

  - 6.3 Correlation, fingerprinting and patterns: merges all previous description of derivations of attributes of individuals into the same text. (merged sections 6.5, 6.6)

  - 6.4 Personal and shared devices: left unchanged. (previously: 6.7)

- Section 6.8 on MAC addresses as PII is dropped, since this is addressed in Section 8.

# Section 6 remake – continued

- Language brought in line with *adversary* and *target* terminology of Section 3.

- Dropping *privacy violation* in favour of *PII disclosure* or *exposure*, also to converge with definitions in Section 3.

- Switching from *protocol* to *specification* to better conform with 802 LMSC standardisation activities (as opposed to, for instance, IETF activities).

# Section 3 revisions – consistency

- Changes in section 3:

  - Removing "Strong PII" and "weak PII".

    - These distinctions seem no longer necessary with the new, broader texts in section 6, combined with the more to the point, self-assessment schema of section 8.

# To do: Section 7.

- Bringing language in line with Section 3: Definitions, <u>if necessary</u>(!)

# References

- M. Vanhoef, C. Matte, M. Cunche, L.S. Cardoso, F. Piessens, *Tracking 802.11 stations without relying on the link layer identifier*, IEEE privecsg-16-0003-00-0000, 14 April 2016.

- J.C. Zúñiga, *802E Privacy Mitigations*, IEEE privecsg-16-0002-00-0000, 23 March 2016.

- IETF RFC 6973, *Privacy Considerations for Internet Protocols*, July 2013. https://tools.ietf.org/html/rfc6973